



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,041	02/28/2006	Jean-Pierre Schoellkopf	S1022.81095US00	8689
46329	7590	07/03/2007		
STMicroelectronics Inc. c/o WOLF, GREENFIELD & SACKS, P.C. 600 Atlantic Avenue BOSTON, MA 02210-2206			EXAMINER CLARK, JASMINE JHIHAN B	
			ART UNIT 2815	PAPER NUMBER
			MAIL DATE 07/03/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

TH

**Office Action Summary**

Application No.

10/542,041

Applicant(s)

SCHOELLKOPF, JEAN-PIERRE

Examiner

Jasmine J. Clark

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/13/5.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Information Disclosure Statement***

1. The IDS filed 7/13/5 has been considered.

***Claim Rejections - 35 USC § 112***

2. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the second electrode" in line 3. There is insufficient antecedent basis for this limitation in the claim. Similar to claim 1 is claim 4, line 5.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Kishi et al. (US 5,302,542).

Kishi '542 discloses relating to a capacitor having a first electrode 22 for example formed of a heavily-doped region of a semiconductor component formed on the side of a surface of a semiconductor bulk 11, and a second electrode 18, eg., formed of a conductive region coated with an insulator 17 formed under said active region and embedded in the semiconductor bulk 11, wherein the coated of the conductive region

Art Unit: 2815

comprises an extension above a portion of which is formed a contact opening (area 20) towards the second electrode 18, and wherein the heavily-doped active region is the drain of a MOS transistor (see column 4, lines 9-10).

4. Claims 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Lu (US 5,843,820).

Lu '820 discloses a method for manufacturing a capacitor having a first electrode 17, eg., (see Figs. 10-12) formed a heavily-doped active region of a semiconductor component comprising:

- a) forming at a surface of an initial semiconductor substrate 8, a conductive region 50 coated with an insulator 48;
- b) growing by epitaxy a semiconductor layer (see column 6, line 62 to column 7, lines 1+) to cover the initial substrate and bury coated region; and
- c) forming said heavily-doped active region across an entire thickness of said semiconductor layer, above a portion of the coated conductive region.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the reference as applied to claim 7 above, and further in view of Kishi et al. (US 5,302,542).

Lu' 820 discloses that the heavily-doped active region is the drain region, eg., of DRAM FET (see column 8, line 49, eg.), but fails to literally disclose wherein the heavily-doped active region is, the drain of a MOS transistor. Hence, it would have been obvious to include a MOS transistor for the drain or source region in the semiconductor component, as is notoriously known.

6. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***References Cited***

7. Campbell et al. (US 6,759,282 B2) and Lu (US 4,649,625) show a capacitor structure with an electrode coated with an insulator under an active region and embedded in a semiconductor bulk.

#### ***Telephone Inquiry Contacts***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine J. Clark whose telephone number is (571) 272-1726. The examiner can normally be reached on Flex.

Art Unit: 2815

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jjbc/06/23/7

**JASMINE CLARK**  
**PRIMARY EXAMINER**

Handwritten signature of Jasmine Clark in cursive script.